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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,957	11/30/2006	Kristine Fuimaono	32860-001019/US	3067

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EXAMINER	
NGUYEN, HIEN NGOC	
ART UNIT	PAPER NUMBER
3768	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/569,957	FUIMAONO ET AL.	
	Examiner	Art Unit	
	HIEN NGUYEN	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/28/2006; 03/27/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 15-16, 19-20, 22, 27-29, 1-5, 7, 9-10, 14 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (US 6,556,695) and in view of Leiper (US 6,128,002).

Regarding claim 15-16, 19-20 and 22 Packer discloses:

- at least one input interface for electroanatomical 3D mapping data and 3D image data; (see Fig. 1, col. 2, lines 14-60, col. 3, lines 51-67). Packer discloses a system that perform an imaging method therefore the system must have at least one input interface for electroanatomical 3D mapping data and 3D image data.
- an extraction module, designed to extract at least significant portions of an area to be treated from the 3D image data and provides selected 3D image data; (see Fig. 2A, col. 6, lines 14-45 and col.7, lines 7-23). Segmentation is used to extract data.
- a registration module connected to the extraction module designed for correlation of the electroanatomical 3D mapping data and the selected 3D

image data in the correct position and dimension; (see Fig. 1, Fig. 8, col. 2, lines 14-60 and col. 9, line 21-col.10, line 36).

- a visualization module connected to the registration module to provide the 3D mapping data and the selected 3D image data for visualization in the correct position and dimension; (see abstract, Fig. 1, Fig. 8, col. 2, lines 14-60 and col. 9, line 21-col.10, line 36). It would have been obvious to one skill in the art at the time of the invention that the visualization module is connected to the registration module in order to display the image.

However, Packer does not disclose a system that displays multiple images or multiple image data next to one another or side by side.

Leiper discloses:

- a system that displays multiple images side by side on one computer monitor or on multiple computer monitors so operator can compare the images; (see Fig. 4-6 and col. 4 lines 16-27).

It would have been obvious to one ordinary skill in the art at the time of the invention to modify Leiper's system with a system that displays multiple images side by side on one computer monitor or on multiple computer monitors taught by Leiper because it would be easier for comparing and analyzing images when displaying 3D mapping data and 3D image data side by side on the same monitor or in multiple monitors.

Regarding claim 27, the device in this claim has the same structure and performs the same function as a device in claim 15 therefore it is rejected for the same reason as in claim 15.

Regarding claims 28 and 29, Packer discloses:

- the 3D image data of the body region are recorded with at least one of X-ray computer tomography and magnetic resonance tomography; (see col. 1, lines 15-35 and col. 3, lines 51-67).
- the 3D image data of the body region are recorded using 3D ultrasound; (see col. 1, lines 15-35 and col. 3, lines 51-67).

Regarding claim 1, this method is perform by a device in claim 15. Therefore the method is rejected for the same reason as in claim 15.

Regarding claim 2, this method is perform by a device in claim 28. Therefore the method is rejected for the same reason as in claim 28.

Regarding claim 3, this method is perform by a device in claim 29. Therefore the method is rejected for the same reason as in claim 29.

Regarding claim 4, this method is perform by a device in claim 19. Therefore the method is rejected for the same reason as in claim 19.

Regarding claim 5, this method is perform by a device in claim 20. Therefore the method is rejected for the same reason as in claim 20.

Regarding claim 7, this method is perform by a device in claim 16. Therefore the method is rejected for the same reason as in claim 16.

Regarding claim 9, this method is perform by a device in claim 18. Therefore the method is rejected for the same reason as in claim 18.

Regarding claims 10 and 14 Packer discloses:

- the 3D image data are visualized via a volume rendering technique; (see col. 6, line 1-13).
- registered 3D image data, real-time 3D mapping data and display a catheter in the selected 3D image data in real-time; (see col. 2, lines 15-60 and col. 10, line 14-36).

Regarding claim 24, this method is perform by a device in claim 27. Therefore the method is rejected for the same reason as in claim 27.

Regarding claim 25, this method is perform by a device in claim 28. Therefore the method is rejected for the same reason as in claim 28.

Regarding claim 26, this method is perform by a device in claim 29. Therefore the method is rejected for the same reason as in claim 29.

3. Claims 17-18, 21 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (US 6,556,695), in view of Hemler et al. (A System for Multimodality Image Fusion (provided as prior art in the IDS)) and further in view of Williams et al. (DE 19953308-A1).

Regarding claims 17-18, and 21 Packer discloses substantially all claim limitation set forth in claim 15 above. However, he does not disclose correlate the

correct position and the correct dimension using distinct anatomical points and artificial marker.

Williams discloses:

- correlate the correct position and the correct dimension using artificial marker identifiable in 3D image data and in the 3D mapping data as an effective way to ensure the images on display are in correct position and dimension; (see abstract).

Hemler discloses:

- correlate the correct position and the correct dimension using distinct anatomical points identifiable in 3D image data and in the 3D mapping data as an effective way to ensure the images on display are in correct position and dimension; (see page 337, line 7- page 338, line 32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Packer's system to correlate the correct position and the correct dimension using distinct anatomical points and artificial marker taught by Hemler and Williams because using distinct anatomical points and artificial marker are effective way to ensure the images display are in correct position and dimension.

Regarding claim 6, the method is perform by a device in claim 21. Therefore the method is rejected for the same reason as in claim 21.

4. Claims 23 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (US 6,556,695), in view of Leiper (US 6,128,002) and further in view of Hughes et al. (US 7,233,340).

Regarding claim 23, Packer and Leiper disclose substantially all claim limitation set forth in claim 15. However, they do not disclose linking two visualizations together so that when user rotates, moves or scales one of the visualizations the other visualization is simultaneously subjected to the same rotation, movement or scaling.

Hughes discloses:

- a visualization module for linking two visualizations together so that when user rotates, moves or scales one of the visualizations the other visualization is simultaneously subjected to the same rotation, movement or scaling therefore the two visualizations would have the same position and dimemsion; (see col. 11, lines 12-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Packer's system to link the two visualizations together so that when user rotates, moves or scales one of the visualizations the other visualization is simultaneously subjected to the same rotation, movement or scaling taught by Hughes because by linking two visualizations together so that when user rotates, moves or scales one of the visualizations the other visualization is simultaneously subjected to the same rotation, movement or

scaling therefore the two visualizations would have the same position and dimension.

Regarding claim 13, this method is perform by a device in claim 23. Therefore the method is rejected for the same reason as in claim 23.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (US 6,556,695), in view of Leiper (US 6,128,002) and further in view Schweikard et al. (US 6,144,875).

Packer and Leiper disclose substantially all claim limitation set forth in claim 1. However, they do not disclose an artificial marker attach to the patient's thorax.

Schweikard discloses:

- an artificial marker attach to the patient's thorax to measure breathing and heart beat; (see col. 7, lines 14-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Packer's method to attach a marker to the patient's chest taught by Schweikard because breathing and heartbeat can be measure by attaching a marker to the chest.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (US 6,556,695), in view of Leiper (US 6,128,002) and further in view of Krishnan (US 6,771,262)

Packer and Leiper disclose substantially all claim limitation set forth in claim 10.

However, they do not disclose an adjustable volume rendering transfer function.

Krishnan discloses:

- using an adjustable volume rendering transfer function to specify boundary condition to improve image quality; (see col. 7, line 64-col.8, line 5).

It would have been obvious to one skill in the art at the time of the invention to modify Packer's method by using an adjustable volume rendering transfer function because adjustable volume rendering transfer function would specify boundary condition and improve image quality.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Packer et al. (US 6,556,695), in view of Leiper (US 6,128,002) and further in view of Massaro et al. (US 2002/0087329).

Packer does not disclose visualized image data on a polygonal grid.

Massaro discloses:

- visualize image on a polygonal grid for easily matching location and determine distance; (see claim 58).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Packer's method to visualized image data on a polygonal grid

taught by Massaro because polygonal grid allow the viewer to easily match location and determine distance.

Conclusion

There are prior arts uses for rejection: US 6,556,695; US 6,128,002; A System for Multimodality Image Fusion (provided as prior art in the IDS); DE 19953308-A1 (provided as prior art in the IDS); US 7,233,340; US 6,144,875; US 6,771,262; US 2002/0087329.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HIEN NGUYEN whose telephone number is (571)270-7031. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. N./
Examiner, Art Unit 3768

/Long V Le/

Supervisory Patent Examiner, Art Unit 3768